

CLAIMS

1. A composition for delivering a β -hydroxy short-medium chain fatty acid or a oligomer thereof to the large intestine, which comprises a polymer of the β -hydroxy short-medium chain fatty acid.
2. The composition of Claim 1, wherein the β -hydroxy short-medium chain fatty acid is selected from the group consisting of: β -hydroxybutyric acid, β -hydroxypropionic acid, β -hydroxyvaleric acid, β -hydroxycaproic acid, β -hydroxycaprylic acid, β -hydroxycapric acid, and a mixture thereof.
3. The composition of Claim 1 or 2, wherein the polymer is a monopolymer of a β -hydroxy short-medium chain fatty acid.
4. The composition of Claim 1 or 2, wherein the polymer is a copolymer of β -hydroxy short-medium chain fatty acids.
5. The composition of any one of Claims 1 to 4, wherein the polymer is a monopolymer or copolymer comprising β -hydroxybutyric acid residue.
6. The composition of any one of Claims 1 to 5, wherein the poly(β -hydroxy short-medium chain fatty acid) is water insoluble.
7. The composition of any one of Claims 1 to 6, wherein the weight average molecular weight of the poly(β -

hydroxy short-medium chain fatty acid) is in the range of 1,000-20,000,000.

8. The composition of any one of Claims 1 to 7, wherein the poly(β -hydroxy short-medium chain fatty acid) is that produced by a microorganism.

9. The composition of Claim 8, which comprises the microorganism containing the poly(β -hydroxy short-medium chain fatty acid).

10. The composition of Claim 9, wherein the microorganism comprises at least one selected from the group consisting of selenium, cobalt, manganese, zinc and copper.

11. The composition of any one of Claims 1 to 7, wherein the poly(β -hydroxy short-medium chain fatty acid) is that produced by a plant.

12. The composition of Claim 11, which comprises the plant containing the poly(β -hydroxy short-medium chain fatty acid).

13. The composition of any one of Claims 1 to 12, which is an animal feeding stuff or an additive for an animal feeding stuff.

14. The composition of any one of Claims 1 to 12, which is a functional food product.

15. The composition of any one of Claims 1 to 12, which is a pharmaceutical composition for an animal

including human.

16. The composition of any one of Claims 13 to 15, which is used for preventing or treating inflammatory bowel disease.

5 17. The composition of any one of Claims 13 to 15, which is used for preventing or treating irritable bowel syndrome.

18. The composition of any one of Claims 13 to 15, which is used for relieving stress.

10 19. The composition of any one of Claims 13 to 15, which is used for promoting fat mobilization.

20. The composition of any one of Claims 13 to 15, which is used for preventing or treating large bowel cancer.

15 21. The composition of any one of Claims 13 to 15, which is used for keeping the bowel movement normal.

22. The composition of Claim 21, which is used for preventing or treating diarrhea.

23. The composition of Claim 21, which is used for preventing or treating constipation.

20 24. The composition of any one of Claims 13 to 15, which is used for preventing or treating hyperlipidemia.

25. The composition of any one of Claims 13 to 15, which is used for reducing urinary nitrogen excretion.

26. A method for delivering a β -hydroxy short-medium
25 chain fatty acid or an oligomer thereof to the large

intestine of an animal including human, which comprises administering orally a polymer of the β -hydroxy short-medium chain fatty acid to the animal.

27. A large intestine degradable coating composition,
5 which comprises a polymer of a β -hydroxy short-medium chain fatty acid.

28. The coating composition of Claim 27, wherein the β -hydroxy short-medium chain fatty acid is selected from the group consisting of: β -hydroxybutyric acid, β -hydroxy-
10 propionic acid, β -hydroxyvaleric acid, β -hydroxycaproic acid, β -hydroxycaprylic acid, β -hydroxycapric acid, and a mixture thereof.

29. The coating composition of Claim 27 or 28,
wherein the polymer is a monopolymer of a β -hydroxy short-
15 medium chain fatty acid.

30. The coating composition of Claim 27 or 28,
wherein the polymer is a copolymer of β -hydroxy short-
medium chain fatty acids.

31. A large intestine degradable composition, which
20 is obtainable by coating an active ingredient with the
composition according to any one of Claims 27-30.

32. A composition comprising a β -hydroxy short-medium
chain fatty acid, an oligomer thereof, or a physiologically
acceptable derivative thereof in a manner that said
25 component can be delivered to the large intestine.

33. The composition of Claim 32, which is a pharmaceutical composition for an animal including human.

34. The composition of Claim 32, which is an animal feeding stuff or an additive for an animal feeding stuff.

5 35. The composition of Claim 32, which is a functional food product.

36. The composition of any one of Claims 32 to 35, which is for the use selected from the group consisting of preventing or treating inflammatory bowel disease, 10 irritable bowel syndrome, large bowel cancer, hyperlipidemia, diarrhea and constipation, and relieving stress, promoting fat mobilization and reducing urinary nitrogen excretion.

37. The composition of Claim 36, which is used for 15 treating or preventing large bowel cancer.